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Ida Micaily, MD
Abington Jefferson Health

Marc Chernoff, DO
Abington Jefferson Health

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An Unknown Reaction to Pembrolizumab: Giant Cell Arteritis

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I. Micaily^{1*}, M, Chernoff² Department of Medicine¹ and Abington Hematology/ Oncology Associates², Abington Jefferson Health, Abington, Pennsylvania, USA (*E-mail: ida.micaily@jefferson.edu)

Dear Editor,

An 88 year old female with a past medical history of a hypertension, atrial fibrillation, and stage IV non-small cell lung cancer (NSCLC) presented to the emergency department with sudden onset left eye blindness and abdominal pain. She was noted to have worsening anemia and heme-occult positive stools, however abdominal imaging did not indicate any acute pathology. Given her baseline poor functional status, the patient was not a candidate for aggressive interventions. One week prior to presentation, the patient had received a first dose of pembrolizumab, 200 mg intravenous infusion, which was to be administered once every 3 weeks. Upon consultation with an ophthalmologist, she was found to have biopsy confirmed giant cell arteritis (GCA). For her GCA, she was treated with high dose oral prednisone with close clinical monitoring. She endured a prolonged hospital course with constipation, anemia and atrial fibrillation with rapid ventricular rate. The patient was cardioverted twice, and her anemia was treated with two separate transfusion of packed red blood cells.

After discharge, the patient received another dose of 200 mg of IV pembrolizumab, on schedule. Subsequently, she returned to the emergency department five days later with worsening abdominal pain and three episodes of watery diarrhea. An infectious work up was negative, and a CT scan of her abdomen demonstrated focal areas of sigmoid colitis. It was believed that the pathology from both her GCA and colitis were induced by pembrolizumab.

Although colitis is a known and observed phenomena of immunologic therapy (1), GCA has yet to be associated with pembrolizumab. The patient was treated with high dose intravenous steroids. Unlike oral steroids, the patient stated that her eyesight subjectively improved with intravenous steroids. However, due to her poor functional status from prolonged hospitalizations, and concern for worsening gastrointestinal bleeding, the patient decided to switch to oral prednisone, in hope of a gradual taper.

Although the current standard of care for NSCLC with appropriate PDL-1 status are immunologics (2), the possibility of inducing autoimmune effects should be carefully considered in regards to a patient's

quality of life. The current literature correlates PD-1 to several classes of immune-related adverse effects (3, 4). However, GCA has not been attributed to pembrolizumab in the current literature.

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